

## TABLE OF CONTENTS

|  |             |
|--|-------------|
| HOW TO USE THIS ENVIRONMENTAL STUDY .....                                      | .vi         |
| LIST OF ACRONYMS .....   | vii         |
| LIST OF TECHNICAL REPORTS.....   | viii        |
| <b>CHAPTER 1- PURPOSE AND NEED .....</b>                                       | <b>1-1</b>  |
| <b>1.1 INTRODUCTION.....</b>   | <b>1-1</b>  |
| <b>1.2 PROJECT AREA.....</b>   | <b>1-1</b>  |
| <b>1.3 PURPOSE OF THE PROJECT .....</b>  | <b>1-3</b>  |
| <b>1.4 NEED FOR THE PROJECT .....</b>  | <b>1-4</b>  |
| 1.4.1 Infrastructure Deterioration [“Taking Care of What We Have”] .....       | 1-4         |
| Pavement Deterioration .....   | 1-4         |
| Bridges .....  | 1-5         |
| Drainage .....   | 1-6         |
| 1.4.2 Operational Deficiencies [“Making the System Work Better”] .....         | 1-8         |
| Mainline Operations.....   | 1-8         |
| Interchanges and Ramp Operations .....   | 1-8         |
| 1.4.3 Traffic Flow and Congestion [“Increasing Capacity”] .....                | 1-9         |
| Improving Traffic Flow .....   | 1-9         |
| Level of Service .....   | 1-9         |
| 1.4.4 Safety [“Improving Safety”].....   | 1-10        |
| Accident Rate.....   | 1-10        |
| <b>1.5 OBJECTIVES OF THE PROPOSED PROJECT .....</b>                            | <b>1-11</b> |
| <b>1.6 RELATED ENVIRONMENTAL DOCUMENTS AND RELEVANT PLANNING STUDIES .....</b> | <b>1-12</b> |
| <b>1.7 DECISIONS TO BE MADE .....</b>  | <b>1-12</b> |
| <b>1.8 SCOPING OF ENVIRONMENTAL ISSUES .....</b>                               | <b>1-13</b> |
| <b>1.9 FEDERAL, STATE, OR LOCAL PERMITS OR CONSULTATION .....</b>              | <b>1-13</b> |
| <b>1.10 SUMMARY .....</b>  | <b>1-13</b> |
| <b>CHAPTER 2- ALTERNATIVES .....</b>   | <b>2-1</b>  |
| <b>2.1 ALTERNATIVE DEVELOPMENT .....</b>                                       | <b>2-1</b>  |
| 2.1.1 Proposed Action.....   | 2-1         |
| 2.1.2 No-Action/Maintenance Alternative.....                                   | 2-9         |
| 2.1.3 Transportation System/Demand Management Alternative.....                 | 2-9         |
| 2.1.4 Transit Alternative .....  | 2-10        |
| <b>2.2 ALTERNATIVES ELIMINATED FROM CONSIDERATION .....</b>                    | <b>2-12</b> |
| 2.2.1 No-Action/Maintenance Alternative.....                                   | 2-12        |
| 2.2.2 Transportation System/ Demand Management Alternative.....                | 2-12        |
| 2.2.3 Transit Alternative .....  | 2-12        |
| <b>CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES .....</b>     | <b>3-1</b>  |
| <b>3.1 LAND USE .....</b>  | <b>3-2</b>  |

|   |             |
|---|-------------|
| 3.1.1 Affected Environment.....                 | 3-2         |
| 3.1.2 No-action Alternative.....                | 3-5         |
| 3.1.3 Proposed Action.....                      | 3-6         |
| 3.1.4 Proposed Mitigation Measures .....        | 3-7         |
| <b>3.2 SOCIAL CONDITIONS .....</b>              | <b>3-7</b>  |
| 3.2.1 Affected Environment.....                 | 3-7         |
| 3.2.2 No-action Alternative.....                | 3-10        |
| 3.2.3 Proposed Action.....                      | 3-10        |
| 3.2.4 Proposed Mitigation Measures .....        | 3-11        |
| <b>3.3 ENVIRONMENTAL JUSTICE .....</b>          | <b>3-11</b> |
| 3.3.1 Affected Environment.....                 | 3-12        |
| 3.3.2 No-action Alternative.....                | 3-12        |
| 3.3.3 Proposed Action.....                      | 3-12        |
| 3.3.4 Proposed Mitigation Measures .....        | 3-13        |
| <b>3.4 ECONOMIC CONDITIONS.....</b>             | <b>3-13</b> |
| 3.4.1 Affected Environment.....                 | 3-13        |
| 3.4.2 No-action Alternative.....                | 3-13        |
| 3.4.3 Proposed Action.....                      | 3-13        |
| 3.4.5 Proposed Mitigation Measures .....        | 3-14        |
| <b>3.5 RELOCATIONS .....</b>                    | <b>3-14</b> |
| 3.5.1 Affected Environment.....                 | 3-14        |
| 3.5.2 No-action Alternative.....                | 3-14        |
| 3.5.3 Proposed Action.....                      | 3-14        |
| 3.5.4 Proposed Mitigation Measures .....        | 3-16        |
| <b>3.6 PEDESTRIANS AND BICYCLISTS.....</b>      | <b>3-20</b> |
| 3.6.1 Affected Environment.....                 | 3-20        |
| 3.6.2 No-action Alternative.....                | 3-21        |
| 3.6.3 Proposed Action.....                      | 3-23        |
| 3.6.4 Proposed Mitigation Measures .....        | 3-23        |
| <b>3.7 AIR QUALITY.....</b>                     | <b>3-23</b> |
| 3.7.1 Affected Environment.....                 | 3-23        |
| 3.7.2 No-action Alternative.....                | 3-24        |
| 3.7.3 Proposed Action.....                      | 3-24        |
| 3.7.4 Proposed Mitigation Measures .....        | 3-25        |
| <b>3.8 NOISE .....</b>                          | <b>3-26</b> |
| 3.8.1 Affected Environment.....                 | 3-27        |
| 3.8.2 No-action Alternative.....                | 3-27        |
| 3.8.3 Proposed Action.....                      | 3-28        |
| 3.8.4 Proposed Mitigation Measures .....        | 3-28        |
| <b>3.9 GEOLOGY, SOILS, AND TOPOGRAPHY .....</b> | <b>3-41</b> |
| 3.9.1 Affected Environment.....                 | 3-41        |
| 3.9.2 No-action Alternative.....                | 3-41        |
| 3.9.3 Proposed Action.....                      | 3-41        |
| 3.9.4 Proposed Mitigation Measures .....        | 3-41        |
| <b>3.10 WATER QUALITY.....</b>                  | <b>3-45</b> |

|  |             |
|--|-------------|
| 3.10.1 Affected Environment.....   | 3-45        |
| 3.10.2 No-action Alternative.....  | 3-45        |
| 3.10.3 Proposed Action.....  | 3-45        |
| 3.10.4 Proposed Mitigation Measures .....  | 3-46        |
| <b>3.11 CULTURAL RESOURCES.....</b>  | <b>3-46</b> |
| 3.11.1 Affected Environment.....   | 3-46        |
| 3.11.2 No-action Alternative.....  | 3-56        |
| 3.11.3 Proposed Action.....  | 3-56        |
| 3.11.4 Proposed Mitigation Measures .....  | 3-56        |
| <b>3.12 VISUAL CONDITIONS.....</b>   | <b>3-60</b> |
| 3.12.1 Affected Environment.....   | 3-60        |
| 3.12.2 No-action Alternative.....  | 3-60        |
| 3.12.3 Proposed Action.....  | 3-60        |
| 3.12.4 Proposed Mitigation Measures .....  | 3-61        |
| <b>3.13 INVASIVE SPECIES .....</b>   | <b>3-61</b> |
| 3.13.1 Affected Environment.....   | 3-61        |
| 3.13.2 No-action Alternative.....  | 3-61        |
| 3.13.3 Proposed Action.....  | 3-61        |
| 3.13.4 Proposed Mitigation Measures .....  | 3-61        |
| <b>3.14 CONSTRUCTION.....</b>  | <b>3-62</b> |
| 3.14.1 Affected Environment.....   | 3-62        |
| 3.14.2 No-action Alternative.....  | 3-62        |
| 3.14.3 Proposed Action.....  | 3-62        |
| 3.14.4 Proposed Mitigation Measures .....  | 3-63        |
| <b>3.15 CUMULATIVE IMPACTS .....</b>   | <b>3-65</b> |
| 3.15.1 Past, Present, and Reasonably Foreseeable Future Actions That May Affect the Environment..... | 3-65        |
| 3.15.2 Irreversible and Irretrievable Commitments of Resources .....                                 | 3-66        |
| 3.15.3 Short-Term Uses of Man's Environment Versus Long Term Productivity.....                       | 3-66        |
| <b>3.16 SUMMARY OF MITIGATION/OTHER COMMITMENTS .....</b>  | <b>3-67</b> |
| <b>CHAPTER 4-COMMENTS AND COORDINATION .....</b>   | <b>4-1</b>  |
| <b>4.1 COORDINATION ACTIVITIES AND MEETINGS .....</b>  | <b>4-1</b>  |
| <b>4.2 AGENCY CORRESPONDENCE LETTERS.....</b>  | <b>4-9</b>  |

**APPENDIX A: I-80: STATE STREET TO 1300 EAST TRAFFIC OPERATIONS ANALYSIS**  
**APPENDIX B: UDOT NOISE ABATEMENT POLICY**

## List of Tables

|   |      |
|---|------|
| Table 1-1. Summary of Existing I-80 Bridge Deficiencies .....   | 1-6  |
| Table 1-2. Current and Anticipated Traffic Volumes for the I-80 Mainline and Level of Service.....    | 1-10 |
| Table 1-3. Comparison of Crash Rates, Severity, and Types of Accidents on I-80 .....                  | 1-10 |
| <br>Table 2 1. Comparison of Alternatives by Ability to Meet Purpose and Need .....                   | 2-13 |
| <br>Table 3-1. Selected Socio-Demographic Characteristics Regarding Environmental Justice Issues..... | 3-12 |
| Table 3-2. Amount of Right-of-way Acquisition Per Parcel .....  | 3-15 |
| Table 3-3. Projected 2030 Conditions CAL3QHC CO Analysis Results.....                                 | 3-25 |
| Table 3-4. Noise Abatement Criteria (FHWA and UDOT).....  | 3-26 |
| Table 3-5. Receivers Measured for Existing Noise Levels Along I-80 Corridor .....                     | 3-27 |
| Table 3-6. National Register of Historic Places Criteria .....  | 3-47 |
| Table 3-7. SHPO Rating Criteria .....   | 3-47 |
| Table 3-8. Impacts on Historic Structures from Proposed Action.....                                   | 3-48 |
| <br>Table 4-1. Coordination Letters .....   | 4-9  |

## List of Figures

|   |      |
|---|------|
| Figure 1-1. Project Location Map.....   | 1-2  |
| Figure 1-2. Cross-Streets Within the Project Area .....   | 1-2  |
| Figure 1-3. Existing Typical Section of I-80 .....  | 1-3  |
| Figure 1-4. Examples of the Types of Deterioration of the I-80 Bridge Structures .....            | 1-6  |
| Figure 1-5. Level of Service .....  | 1-9  |
| Figure 1-6. I-80 Traffic Accident Distribution (2002-2004) .....                                  | 1-11 |
| <br>Figure 2-1. Typical for the Proposed Action .....   | 2-3  |
| Figure 2-2. Horizontal Alignment and Bridge Structures for the Proposed Action .....              | 2-4  |
| Figure 2-3. Proposed Culdesac (Closure of Driggs Avenue 1300 East Access) .....                   | 2-8  |
| Figure 2-4. Existing and Proposed Highland Drive Bridge Structures.....                           | 2-8  |
| Figure 2-5. Proposed Modifications to Highland Drive Bridge Structures (Visual Concept)....       | 2-9  |
| Figure 2-6. The Utah Transit Authority's Future Transit Plans.....                                | 2-11 |
| <br>Figure 3-1. Zoning Map for South Salt Lake City .....   | 3-3  |
| Figure 3-2. Zoning Map for the Sugar House Community of Salt Lake City .....                      | 3-4  |
| Figure 3-3. Future Land Use Map for the Sugar House Community of Salt Lake City .....             | 3-4  |
| Figure 3-4. Open Space, Parks and Recreation Facilities Along I-80 Corridor .....                 | 3-5  |
| Figure 3-5. Existing Elizabeth Sherman Park and Conceptual Rendering of Proposed Alteration ..... | 3-6  |
| Figure 3-6: Typical of the New Bridge Structure at Highland Drive .....                           | 3-7  |
| Figure 3-7. Neighborhood Groups.....  | 3-8  |
| Figure 3-8. Selected Socio-Demographic Characteristics of Populations within the Project          |      |

|  |      |
|--|------|
| Area.....  | 3-9  |
| Figure 3-9. Selected Socio-Demographic Characteristics of Corridor-Proximate Population ...              | 3-9  |
| Figure 3-10. Right-of-way Acquisitions and Relocations .....   | 3-17 |
| Figure 3-11. Salt Lake City Bicycle and Pedestrian Master Plan Existing Routes .....                     | 3-20 |
| Figure 3-12. Wasatch Front Urban Area Long Range Plan 2004-2030 Bicycle Paths.....                       | 3-21 |
| Figure 3-13. Salt Lake City Bicycle and Pedestrian Master Plan.....                                      | 3-22 |
| Figure 3-14. Parley's Creek Corridor Trail Master Plan .....   | 3-22 |
| Figure 3-15. Typical Noise Levels (in decibels).....   | 3-26 |
| Figure 3-16. Existing Noise Levels Along I-80 Corridor State Street to 700 East (North and South).....   | 3-30 |
| Figure 3-17. Existing Noise Levels Along I-80 Corridor 700 East to 1300 East (North and South).....      | 3-31 |
| Figure 3-18. 2030 Noise Levels for the No-action Alternative State Street to 700 East.....               | 3-32 |
| Figure 3-19. 2030 Noise Levels for the No-action Alternative 700 East to 1300 East .....                 | 3-33 |
| Figure 3-20. 2030 Noise Levels for the Proposed Action Prior to Mitigation State Street to 700 East..... | 3-34 |
| Figure 3-21. 2030 Noise Levels for the Proposed Action Prior to Mitigation 700 East to 1300 East.....    | 3-35 |
| Figure 3-22. Locations of Potential Noise Barriers State Street to 700 East).....                        | 3-38 |
| Figure 3-23. Locations of Potential Noise Barriers 700 East to 1300 East .....                           | 3-39 |
| Figure 3-24. Predicted Impacts from Potential Soil Settlement .....                                      | 3-42 |
| Figure 3-25: Cultural Resources Located in the Project Area .....  | 3-57 |